Intellectual Property Protection for Computer Software in the United States

How can you protect what you or your client considers novel aspects of your computer software in the United States? What options are available to protect the ideas that were transformed into computer code? What laws are in place to protect the expression of your computer code? In the United States, intellectual property laws exist to protect aspects of computer programs. The most effective way to cover such software is through copyright and patent protection.

I. Copyright Protection

Under the United States copyright laws, a computer program is considered a literary work[1] and thus is eligible for copyright protection.[2] Copyright protection extends to all of the copyrightable expression embodied in a computer program, but copyright protection is not available for ideas, program logic, algorithms, systems, methods, concepts, or layouts.[3] In other words, copyright protection applies to the computer software code. Therefore, the main disadvantage of copyright protection for computer programs is it does not protect the functionality or technique of the program. As a result, another software developer can develop other software that performs the same function or can apply the technique of a

[1] A literary work is any work "expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film, tapes, disks, or cards, in which they are embodied," 17 U.S.C. § 101 (2000). Copyright protection extends to all "original works of authorship fixed in any tangible medium of expression." 17 U.S.C. § 102(a) (2000), and works of authorship include literary works. *Id.*

[2] The owner of a copyright has the exclusive right to reproduce, distribute, perform, display, and prepare derivative works of the copyright. 17 U.S.C. § 106 (2000). Anyone who violates one of these rights will be found to infringe the copyright. 17 U.S.C. § 501 (2000). Upon a finding of infringement, the copyright owner may then obtain an injunction to stop the infringement, 17 U.S.C. § 502 (2000), collect damages from the infringer, 17 U.S.C. §§ 504, 505 (2000), or cause to be impounded all copies made of the copyrighted work in violation of the owner's copyright. 17 U.S.C. § 503 (2000).

[3] "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." 17 U.S.C. § 102(b) (2000).

particular copyrighted program to another problem in a different way without infringing the copyright.

Conversely, a major advantage to copyright protection is that it is relatively inexpensive and easy to obtain. This ease of copyrightability allows computer programmers to write code freely without fear of infringing on another person's copyright as long as the expression (the code) is different than the copyright protected expression (the copyright protected code). In other words, only the particular expression of an idea is protected, but the idea itself is not protected. Another advantage to copyright protection is its duration. For all works created on or after January 1, 1978, copyright protection endures during the life of the author plus 70 years after the author's death.[4] Additionally, if a work is a work made for hire,[5] copyright protection endures for a term of 95 years from the year of its first publication or for a term of 120 years from the year of its creation, whichever expires first.[6]

The registration becomes effective on the day that the Copyright Office receives the application payment and copies of the identifying material in acceptable form. If the work is accepted, the registrant will receive a certificate of registration within 12 months.

Identifying Material

One of the disadvantages and concerns that is often raised is the requirement of having to provide the Copyright Office with identifying material, which is of course the computer program code. However, this should not be the reason for deciding not to pursue copyright protection. When registering a computer program without trade secrets, the

[4] 17 U.S.C. § 302(a) (2000).
[5] A work made for hire is "a work prepared by an employee within the scope of his or her employment." 17 U.S.C. § 101 (2000). "In the case of a work made fore hire, the employer or other person for whom the work was prepared is considered the author for purposes of this title, and, unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all of the rights comprised in the copyright." 17 U.S.C. § 201(b) (2000).
[6] 17 U.S.C. § 302(c) (2000).

registrant sends one copy of identifying portions of the program, which is typically the first 25 and last 25 pages of source code, reproduced in a form visually perceptible without the aid of a machine or device, either on paper or in microform, together with the page or equivalent unit containing the copyright notice, if any. If the identifying portion of the code contains trade secrets, then the code can be partially masked to prevent disclosure and loss of trade secrets.

There are certain specific requirements that must be met when the program is less than 50 pages or if the program is a revision of a previously published or registered mark. There are also specific procedures for handling software that the applicant feels contains trade secrets. An attorney familiar with the U.S. Copyright laws should be able to address such specifics. Therefore, the U.S. Copyright Office does have procedures available for handling software code such that competitors cannot simply obtain a copy of the code from the Copyright Office to use as a source for outright copying or rewriting. Likewise, code that contains trade secrets can also be handled confidentially.

II. Patent Protection

In the past ten years, the number of software patents issued by the United States Patent and Trademark Office has increased substantially. Although algorithms are not patentable subject matter to the extent that they are merely abstract ideas,[7] any algorithm that has a useful application is now considered patentable subject matter.[8] As such, a computer

[7] Laws of nature, natural phenomena, and abstract ideas are excluded from patent protection. *Diamond v. Diehr*, 450 U.S. 175, 185 (1981). As such, "mathematical algorithms are not patentable subject matter to the extent that they are merely abstract ideas." *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998).

[8] "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title." 35 U.S.C. § 101 (2000).

program, which is an algorithm written in a particular language, can be patentable subject matter.[9]

In contrast to copyright protection, patent protection does not protect expression. Rather, a patent for a computer program gives the patent owner during the term of the patent the exclusive right over any algorithm that performs the same function and solves the same problem as the patented program.[10] The term of the patent begins on the day that the patent issues and generally ends 20 years from the date on which the application for the patent was filed.[11] One affect of patents for computer programs is that other programmers may be precluded from discovering other ways to solve the same problem because the problem may be protected and not the specific algorithmic technique. However, this is a major advantage to the owner of a patent on a computer program because the scope of the patent may be broad.

Conversely, there are two major disadvantages to obtaining patent protection for computer programs. First, the shelf life for most computer programs is relatively short. Furthermore, patents generally take between eighteen and twenty-four months to issue after the filing of an application with the Patent and Trademark Office. Therefore, by the time a patent for a computer program issues, the program may be already out of date. The second disadvantage to obtaining patent protection for computer programs is the high cost involved

---

[9] An "application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection." *Diehr*, 450 U.S. at 187. Furthermore, a claim that contains patentable subject matter under 35 U.S.C. § 101 "does not become non-statutory simply because it uses a mathematical formula, computer program, or digital computer." *Id.*

[10] "[W]hoever, without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefore, infringes the patent." 35 U.S.C. 271(a) (2000). Upon a finding of infringement, a patent owner may collect damages from the infringer. 35 U.S.C. § 284 (2000).

[11] 35 U.S.C. § 154 (b) (2000). However, "if the [patent] application contains a specific reference to an earlier filed application . . . [the patent term ends 20 years] from the date on which the earliest such application was filed." *Id.* The United States Board of Patent Appeals and Interferences recently explained that there is "no judicially recognized separate 'technological arts' test" to determine whether subject matter falls within the scope of § 101. *Ex parte Lundgren*, Bd. of Pat. App. & Int., No. 2003-2088 (Sept. 28, 2005).

in obtaining such protection. The government filing fees to obtain a patent will alone generally range from between $1,000 and $3,000, and most applicants must also retain patent counsel as well to prepare the patent application. Therefore, potential applicants must determine whether the cost of obtaining patent protection for their computer programs is worth the benefit of obtaining such protection over the life of the software.

To be patentable, a patent must enable a person skilled in the relevant art to practice the claimed invention and must disclose the best mode for practicing the claimed invention.[12] It is important to note that software code need not be disclosed in computer program patents to satisfy the enablement requirement.[13] Furthermore, United States courts have held that a description of what the software accomplishes that would be sufficient and adequate for a skilled programmer to write the computer program described satisfies the requirement that the patent disclose the best mode of the claimed invention.[14] Therefore, only the functions of the software must be disclosed.

III. What Does It All Mean?

In the end, the decision to protect your computer program in the United States with a copyright, patent, or both depends on the particular computer program involved and your particular business needs and goals. It is wisest to consult with United States counsel to

[12] "The specification [of the patent] shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112 (2000).

[13] The disclosure of computer code in a patent is not necessary to satisfy the enablement requirement because "[t]he conversion of a complete thought . . . into a language a machine understands is necessarily a mere clerical function to a skilled programmer." *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 942 (Fed. Cir. 1990). "[E]nablement is determined from the viewpoint of a skilled programmer using the knowledge and skill with which such person is charged. The amount of disclosure that will enable practice of an invention that utilizes a computer program may vary according to the nature of the invention, the role of the program in carrying it out, and the complexity of the contemplated programming, all from the viewpoint of the skilled programmer." *Id.* at 941.

[14] "As a general rule, where software constitutes part of a best mode of carrying out an invention, description of such a best mode is satisfied by a disclosure of the functions of the software." *Fonar Corp. v. Damadian*, 107 F.3d 1543, 1549 (Fed. Cir. 1997).

determine which course of action is best for you or your client to take. Please contact us at Welsh & Katz, Ltd. if you have any questions or if we can assist you.

John L. Ambrogi, Esq. is a partner at Welsh & Katz, Ltd.

Michele S. Katz, Esq. is an associate at Welsh & Katz, Ltd.

Amy L. Hammer is a law clerk, who will start as an associate at Welsh & Katz, Ltd. this fall.

Welsh & Katz, Ltd. has been providing full-service intellectual property representation and is known for its impressive success record and the breadth of its international practice. The Firm focuses on obtaining patents, trademarks, and copyrights; intellectual property litigation; protecting trade secrets; product anti-counterfeiting; clearance opinions; and licensing transactions. With offices in downtown Chicago and Washington, D.C., Welsh & Katz has proximity to state and federal courts and important governmental agencies, such as the U.S. Patent and Trademark office and the U.S. Copyright Office. ***Please visit us at www.welshkatz.com.***

Welsh & Katz, Ltd.
120 South Riverside Plaza
22nd Floor
Chicago, Illinois 60606
P - (312) 655-1500
F - (312) 655-1501